COMBUSTION AND FLAME

THE JOURNAL OF THE COMBUSTION INSTITUTE

VOLUME 69

Contents

J.-Y. CHEN (Livermore, CA)
Second-Order Conditional Modeling of Turbulent Nonpremixed Flames with a Composite PDF 1
AKIMASA YUUKI and YASUJI MATSUI (Hyogo, Japan)
A Study of Flat Flames on Porous Plug Burners: Structure, Standoff Distance, and Oscillation 37
MERWIN SIBULKIN and KENNETH S. SISKIND (Providence, RI)
Numerical Study of Initiation of a Combustion Wave by an Ignition Kernel 49
A. R. ZUR LOYE and F. V. BRACCO (Princeton, NJ)
Two-Dimensional Visualization of Ignition Kernels in an IC Engine 59
DEREK BRADLEY and F. K.-K. LUNG (Leeds, England)
Spark Ignition and the Early Stages of Turbulent Flame Propagation 71
ALAN R. KERSTEIN (Livermore, CA)
Percolation Model of Polydisperse Composite Solid Propellent Combustion 95
W. D. CHANG, S. B. KARRA, and S. M. SENKAN (Chicago, IL)
A Computational Study of Chlorine Inhibition of CO Flames 113

Book Review 123

MICHAEL R. ZACHARIAH and OWEN I. SMITH (Los Angeles, CA)
Experimental and Numerical Studies of Sulfur Chemistry in $H_2/O_2/SO_2$ Flames 125
KNUT THIELEN and PAUL ROTH (Duisburg, West Germany)
Resonance Absorption Measurements of N, O, and H Atoms in Shock Heated $HCN/O_2/Ar$ Mixtures 141
T. J. OHLEMILLER, T. KASHIWAGI, and K. WERNER (Gaithersburg, MD)
Wood Gasification at Fire Level Heat Fluxes 155
DONALD LUCAS, DEREK DUNN-RANKIN, KENNETH HOM, and NANCY J. BROWN (Berkeley, CA)
Ignition by Excimer Laser Photolysis of Ozone 171
BIRAN G. WICKE and KAREN A. GRADY (Warren, MI)
Nitric Oxide Inhibition of Soot Oxidation by Oxygen Atoms at 298K 185
DEREK DUNN-RANKIN and ALAN R. KERSTEIN (Livermore, CA)
Numerical Simulation of Particle Size Distribution Evolution During Pulverized Coal Combustion 193
R. G. JOKLIK and J. W. DAILY (Berkeley, CA)
LIF Study of CH $A^2\Delta$ Collision Dynamics in a Low Pressure Oxy-Acetylene Flame 211
STEPHEN NIKSA (Stanford, CA) and ALAN R. KERSTEIN and THOMAS H. FLETCHER (Livermore, CA)
Predicting Devolatilization at Typical Coal Combustion Conditions with the Distributed-Energy Chain Model 221
G. ROTZOLL (Hannover, Federal Republic of Germany)
Mass Spectrometric Investigation of the $i\text{-}C_4H_{10}\text{-}O_2\text{-}O_3$ Reaction and Implications for the Reaction Mechanism 229
S. A. BOOTHROYD, A. R. JONES, K. W. NICHOLSON, and R. WOOD (London, England)
Light Scattering by Fly Ash and the Applicability of Mie Theory 235

Brief Communication

P. T. ROBERTS, L. C. SHIRVILL, and L. T. COWLEY (Chester, England)
Bed Carbon Loadings in Fluid Bed Combustion 243

Book Review 249

A. G. DORUNTZ, A. M. ARUSTAMYAN, and A. B. NALBANDYAN (Yerevan, U.S.S.R.)
Low Temperature Ignition of Acetaldehyde-Oxygen Mixtures Initiated by Organic Peroxides Adsorbed on the Surface of a Reaction Vessel 251
J. J. DICK (Los Alamos, NM)
Stress-Time Profiles in Low Density HMX 257
GUY JOULIN and MICHEL CHAMPOIN (Poitiers, France)
Stretch Effects and Solid Propellant Burning 263
L. ORLOFF, J. DE RIS, and M. A. DELICHATSIOS (Norwood, MA)
Chemical Effects on Molecular Species Concentrations in Turbulent Fires 273
SURESH K. AGGARWAL (Chicago, IL)
Chemical-Kinetics Modeling for the Ignition of Idealized Sprays 291
M. T. LIM (Seoul, South Korea), R. W. ANDERSON (Dearborn, MI), and V. S. ARPACI (Ann Arbor, MI)
Prediction of Spark Kernel Development in Constant Volume Combustion 303
M. L. FENTRESS (San Francisco, CA) and T. L. EDDY (Atlanta, GA)
Non-LTE Thermodynamic Properties for Combustion Processes 317
T. KASHIWAGI, T. J. OHLEMILLER, and K. WERNER (Gaithersburg, MD)
Effects of External Radiant Flux and Ambient Oxygen Concentration on Nonflaming Gasification Rates and Evolved Products of White Pine 331
M. C. DRAKE, S. M. CORREA, R. W. PITZ, W. SHYY, and C. P. FENIMORE (Schenectady, NY)
Superequilibrium and Thermal Nitric Oxide Formation in Turbulent Diffusion Flames 347

Brief Communication

J. ADLER (London, England)
Thermal Explosion Theory for a Slab with Partial Insulation: A Correction to $\delta_c(\epsilon)$ 367

Book Review 369